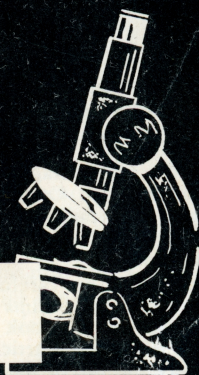


1956
CHEMCRAFT
SCIENCE CLUB
HANDBOOK and CATALOG

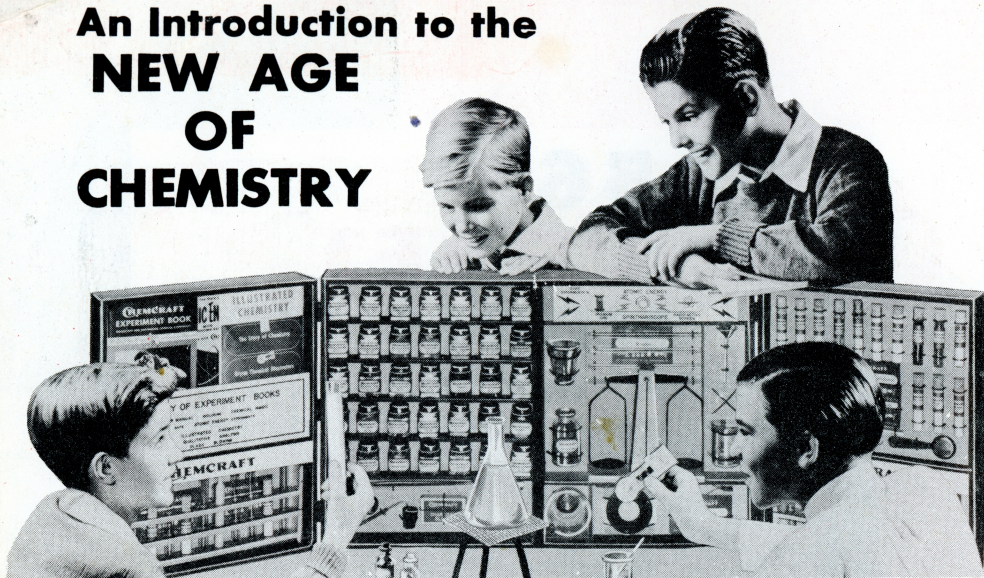


The

PORTER CHEMICAL CO.
HAGERSTOWN, MARYLAND, U. S. A.



An Introduction to the NEW AGE OF CHEMISTRY



BOYS — here is your new **CHEMCRAFT** Catalog and Handbook. In it you will find a splendid assortment of chemical laboratory equipment, chemical refills for your **CHEMCRAFT** Outfits, apparatus, books and manuals, complete **CHEMCRAFT** Outfits, **MICROCRAFT** MICROSCOPES, **MINERALOGY** and other scientific equipment. Here you will read about the unusual Atomic Energy feature — the greatest development in the history of Chemistry Sets.

CHEMCRAFT is considered by millions of boys and their parents as the world's finest introduction to chemistry. Today we stand on the threshold of a great new age in this marvelous field of science. While you explore the wonders of chemistry with **CHEMCRAFT** you will have fun, thrills, and adventure — and you will be preparing yourself for any one of the multitude of fields where chemistry is of value in later life. Remember, you get more, you can do more, and you have more fun with **CHEMCRAFT**.

HOW TO ORDER FROM THIS CATALOG

Address all letters, checks and money orders to The Porter Chemical Company, Hagerstown, Maryland, and mail all orders to that address.

In ordering the various items you desire, be sure to give our catalog No. wherever shown, full description of the item just as it is printed in the catalog, together with size and quantity — and the proper amount of payment.

Send full remittance with your order. Money orders or checks are best. Cash is sent at the sender's risk and should be carefully wrapped. Stamps and Canadian or foreign coins cannot be accepted.

SHIPPING CHARGES

On orders up to \$1.00 include 25 cents for postage and packing.

On orders from \$1.00 to \$2.50 include 40 cents for postage and packing.

On orders from \$2.50 to \$5.00 include 55 cents for postage and packing.

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We pay postage within United States on all orders for \$7.50 or over.

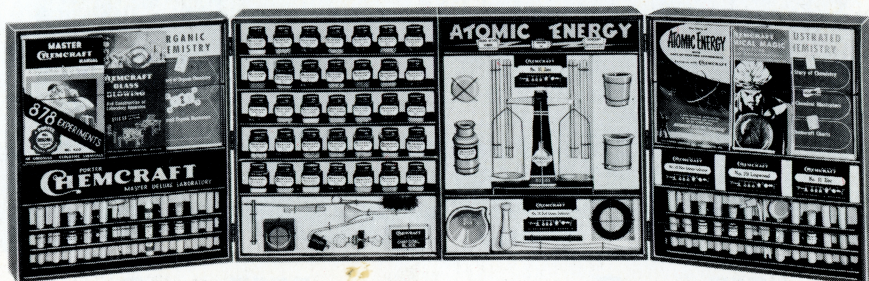
Orders from Canada or overseas must include double the above amounts for postage and shipping charges on orders up to \$7.50. On orders for \$7.50 or over, add 20% of the amount of the order for postage. Duty to Canada or overseas is paid by the customer.

All orders are carefully checked before shipping and packages are insured against loss or breakage. Claims must be entered within 5 days from the time goods are received. Be sure to look carefully through packing material when unpacking shipment as many small articles are thrown out with the packing.

Since the use of the chemicals and apparatus listed in this catalog are beyond our control, we can assume no liability for the results obtained from their use.

THE PORTER CHEMICAL COMPANY

(If resident of State of Maryland include 2% for Sales Tax)



CHEMCRAFT MASTER DELUXE LABORATORY No. 630 Price \$29.98

This completely new and re-designed Chemcraft Outfit is the finest, largest and most complete experimental chemistry outfit available. It represents the fulfillment of every boy chemist's dream, and is designed to provide a superb collection of chemical reagents, apparatus and equipment for home study and experimental research. The Atomic Energy feature is tops in its field — exciting and wonderful, and of real educational value. Important new features in the Master Deluxe Laboratory include the new metal Select-O-Shelves with new screw cap chemical containers, and the following:

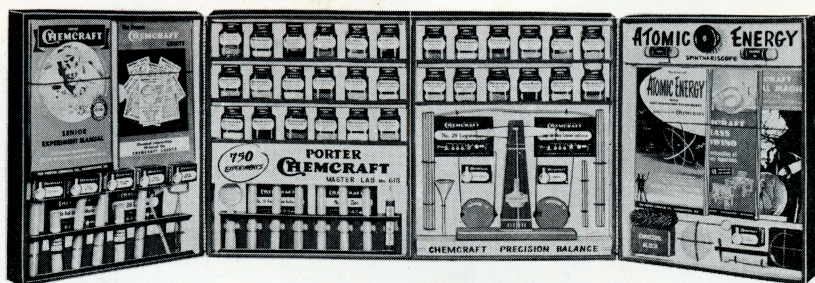
"The Story of Atomic Energy"
The Chemcraft Spinthariscopes
Uranium Ore
Radioactive Screen
Organic Chemistry with
Organic Illustrators

Chemcraft Balance and Weights
The Bryan Chemical Illustrators
The Alcohol Lamp Blow Torch
Gas Generating Apparatus
Mortar and Pestle

Library of Experiment Books
Glass Beaker
Chemical Graduate
Tripod and Wire Gauze
Separate Test Tube Racks

"The Story of Atomic Energy" is the first popular presentation of this subject ever developed. It is most interesting and educational and gives a splendid background of knowledge on this astounding subject. The Chemcraft Spinthariscopes is an amazing instrument that actually shows the emanation of atomic rays. This Atomic Energy feature represents the most significant development ever offered in a chemistry outfit.

The new Master Manual is the most comprehensive book of its kind ever published, and describes and explains 716 chemical experiments with hundreds of illustrations. The Manual is highly recommended by science teachers and educational authorities. Illustrated Chemistry contains a profusely illustrated 24-page book explaining the theory of chemistry, together with the Bryan Chemical Illustrators for visually constructing formulae and equations, and a set of the 8 famous Chemcraft Visual Charts. Organic Chemistry is represented by a 64-page book, "The Story of Organic Chemistry," giving in simple language with many diagrams the basic information on this most important branch of chemistry. Cut-outs for actually constructing organic molecules are also included. The manual on Glass Blowing and the Construction of Laboratory Apparatus gives 46 experiments and 17 projects. The Chemical Magic Book tells how to perform 95 mysterious experiments and magical tricks. The various instruction books describe and explain a total of 875 scientific experiments, and all of the chemicals and equipment required for performing them are included in this outfit.



CHEMCRAFT

MASTER LABORATORY No. 618

Price \$17.98

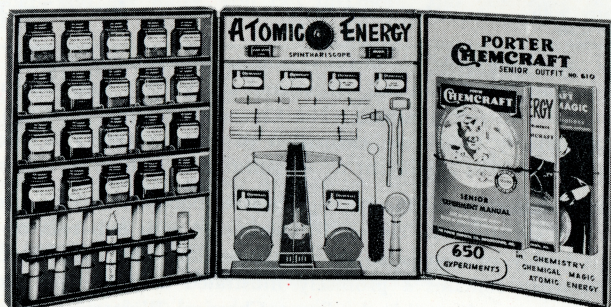
The big new Chemcraft Master Laboratory is a very popular outfit. It contains the Atomic Energy feature, together with a large supply of chemicals and apparatus. Among the contents of this outfit are precision Chemcraft Balance, safe radio-active uranium ore, spinthariscopes for viewing the emanation of atomic rays, blow torch for glass blowing, two large removable steel Test Tube Racks and a splendid assortment of manuals, including:

- Master Chemcraft Manual
- The Story of Atomic Energy
- Chemcraft Glass Blowing and the Construction of Laboratory Apparatus
- Chemcraft Chemical Magic
- Complete Set of the famous Chemcraft Visual Charts

Altogether, more than 750 fascinating and instructive experiments can be performed with this outfit, covering a wide range of the important branches of Chemistry.

This outfit is packed in a large deluxe laboratory-styled lithographed steel cabinet.

Size open: 47 x 13 $\frac{3}{4}$ inches.

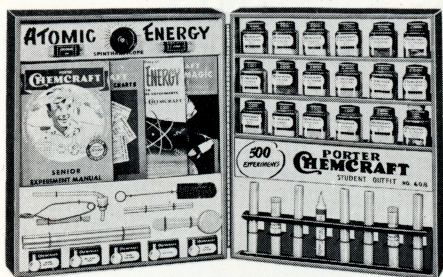


CHEMCRAFT

SENIOR OUTFIT No. 610

Price \$9.98

Bigger and better, packed with more features than ever before. In addition to the large supply of chemicals and valuable apparatus, this outfit contains the exciting Atomic Energy Unit and the new Chemcraft Precision Balance. Over 650 experiments can be performed with this completely redesigned set and it's packed in a big new lithographed steel cabinet. Includes removable metal Test Tube Rack, uranium ore, radioactive screen, spinthariscopes for viewing atomic rays, test tubes and other apparatus for fascinating experiments in General Chemistry, Atomic Energy and Chemical Magic plus the Chemcraft visual charts. Size open 31 $\frac{1}{2}$ x 13 $\frac{3}{4}$ inches.



CHEMCRAFT

STUDENT OUTFIT No. 608

Price \$7.98

The new Student Outfit contains a large supply of chemicals and apparatus, plus uranium ore, radioactive screen and spinthariscopes for viewing atomic rays. Three separate manuals describe 500 different experiments. Features experiments in General Chemistry, mysterious Chemical Magic and fascinating Atomic Energy. Steel Test Tube Racks, Alcohol Lamp, Test Tubes, Glass Tubing and other equipment. Complete instructions and equipment are packed in the new style lithographed all steel cabinet.

Size open: 31½ x 13¾ inches.



CHEMCRAFT

JUNIOR DELUXE OUTFIT No. 605

Price \$4.98

The Junior Deluxe Outfit has a new lithographed, stand up laboratory-type, all steel cabinet. Packed with a large supply of chemicals, test tubes, two removable Test Tube Racks and other professional type apparatus for performing over 300 fascinating experiments. Mystify your friends with chemical magic tricks and give a magic show. New Junior Manual clearly written and illustrated with experiments in General Chemistry and Chemical Magic. A set of the famous Chemcraft visual charts are included.

Size open: 21½ x 13¾ inches.



CHEMCRAFT

JUNIOR OUTFIT No. 603

Price \$2.98

Boys get a thrill when they put on Chemcraft Magic Show. The Chemcraft Magic instructions included in this Junior Outfit tell how to perform mysterious exhibitions of chemical magic. 200 entertaining, educational easy-to-understand illustrated experiments in the new Junior Manual. This attractive outfit contains 24 chemicals and pieces of apparatus including a steel test tube rack, test tube holder, test tubes and other equipment.



CHEMCRAFT

BEGINNERS OUTFIT No. 602

Price \$1.98

The ideal beginners set—designed for hours of fun. Contains chemicals, apparatus and a new, easy-to-understand Chemcraft Beginners Manual describing 182 exciting experiments written especially for 8 and 9 year old budding chemists. Liberal quantities of all chemicals are included so that each experiment can be repeated many times. As is the case with our highest priced sets, all chemicals are labeled with name and formulae, as well as with number—an exclusive Chemcraft feature which adds greatly to the educational value and ease of handling the chemicals. Contains Test Tube Rack, steel Test Tube Holder and measuring devices.

HANDBOOK

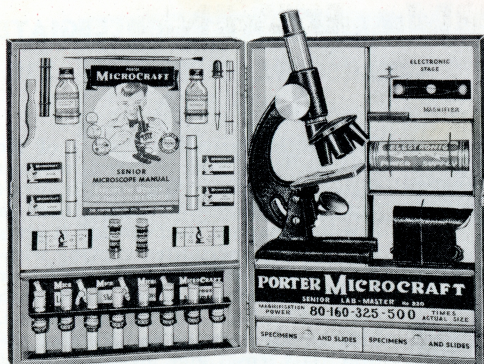
THE CHEMICAL ELEMENTS

Their Symbols, Atomic Numbers, and Atomic Weights

Element	Symbol	Atomic Number	Atomic Weight	Element	Symbol	Atomic Number	Atomic Weight
Actinium	Ac	89	227.	Molybdenum	Mo	42	95.95
Aluminum	Al	13	26.97	Neodymium	Nd	60	144.27
Americium (artificial)	Am	95	241.	Neon	Ne	10	20.183
Antimony	Sb	51	121.76	Neptunium (artificial)	Np	93	237.
Argon	A	18	39.944	Nickel	Ni	28	58.69
Arsenic	As	33	74.91	Niobium (Columbium)	Nb	41	92.91
Astatine (artificial)	At	85	211.	Nitrogen	N	7	14.008
Barium	Ba	56	137.36	Osmium	Os	76	190.2
Berkelium (artificial)	Bk	97	243.(?)	Oxygen	O	8	16.000
Beryllium	Be	4	9.013	Palladium	Pd	46	106.7
Bismuth	Bi	83	209.00	Phosphorus	P	15	30.98
Boron	B	5	10.82	Platinum	Pt	78	195.23
Bromine	Br	35	79.916	Plutonium (artificial)	Pu	94	239.
Cadmium	Cd	48	112.41	Polonium	Po	84	210.
Calcium	Ca	20	40.08	Potassium	K	19	39.096
Californium (artificial)	Cf	98	244.(?)	Praseodymium	Pr	59	140.92
Carbon	C	6	12.01	Promethium (artificial)	Pm	61	147.
Cerium	Ce	58	140.13	Protactinium	Pa	91	231.
Cesium	Cs	55	132.91	Radium	Ra	88	226.05
Chlorine	Cl	17	35.457	Radon	Rn	86	222.
Chromium	Cr	24	52.01	Rhenium	Re	75	186.31
Cobalt	Co	27	58.94	Rhodium	Rh	45	102.91
Copper	Cu	29	63.54	Rubidium	Rb	37	85.48
Curium (artificial)	Cm	96	242.	Ruthenium	Ru	44	101.7
Dysprosium	Dy	66	162.46	Samarium	Sm	62	150.43
Erbium	Er	68	167.2	Scandium	Sc	21	45.10
Europium	Eu	63	152.0	Selenium	Se	34	78.96
Fluorine	F	9	19.00	Silicon	Si	14	28.06
Francium (artificial)	Fa	87	223.	Silver	Ag	47	107.880
Gadolinium	Gd	64	156.9	Sodium	Na	11	22.997
Gallium	Ga	31	69.72	Strontium	Sr	38	87.63
Germanium	Ge	32	72.60	Sulfur	S	16	32.066
Gold	Au	79	197.2	Tantalum	Ta	73	180.88
Hafnium	Hf	72	178.6	Technetium (artificial)	Tc	43	99.
Helium	He	2	4.003	Tellurium	Te	52	127.61
Holmium	Ho	67	164.94	Terbium	Tb	65	159.2
Hydrogen	H	1	1.008	Thallium	Tl	81	204.39
Indium	In	49	114.76	Thorium	Th	90	232.12
Iodine	I	53	126.92	Thulium	Tm	69	169.4
Iridium	Ir	77	193.1	Tin	Sn	50	118.70
Iron	Fe	26	55.85	Titanium	Ti	22	47.90
Krypton	Kr	36	83.7	Uranium	U	92	238.07
Lanthanum	La	57	138.92	Vanadium	V	23	50.95
Lead	Pb	82	207.21	Wolfram (Tungsten)	W	74	183.92
Lithium	Li	3	6.94	Xenon	Xe	54	131.3
Lutetium	Lu	71	174.99	Ytterbium	Yb	70	173.04
Magnesium	Mg	12	24.32	Yttrium	Y	39	88.92
Manganese	Mn	25	54.93	Zinc	Zn	30	65.38
Mercury	Hg	80	200.61	Zirconium	Zr	40	91.22

Element No. 99, Atomic Weight 247 has been isolated but not named. Element No. 100, temporarily named eka-erbium, the heaviest element to date, has a mass of 254.

EXPLORE THE WONDERS OF CHEMISTRY !



SENIOR LAB-MASTER

MICROCRAFT

No. 220

Price \$19.98

electric sub-stage lamp, two handy drawers full of slides, removable test tube rack, electronic stage for examining electrolysis reactions, battery holder, prepared slides, test tubes, slide mounting and dissecting equipment. Complete manual tells how to use the Microscope and describes many observations. Big, handsome laboratory-type wood cabinet is designed for use as a portable lab. Size open 24 x 16½ inches.

It's fascinating to see how things that are invisible to the naked eye really look in the wonderful world of Nature. All around you are interesting objects so easy to see with a really good instrument. This outfit contains the finest amateur Microscope ever offered. Massive in size, professional in appearance and performance. Has features normally found only in expensive professional Microscopes. Four turrets

with magnifications of 75-150-300-450 times actual size. New large lithographed steel cabinet, is packed with valuable apparatus including electric sub-stage lamp, removable test tube rack, specimens, prepared four-in-one slides, dissecting and slide mounting equipment. Microscope has exclusive scanning feature for viewing entire object, plus universal focusing turret that keeps specimen in focus when changing powers. Precision ground and polished lenses give extra clear field. Size open 23½" x 11¾".



MICROCRAFT LAB-MASTER

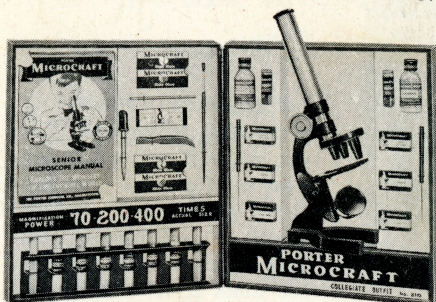
No. 215

Price \$14.98

MICROCRAFT

MICROCRAFT COLLEGIATE MICROSCOPE OUTFIT No. 210

Price \$9.98



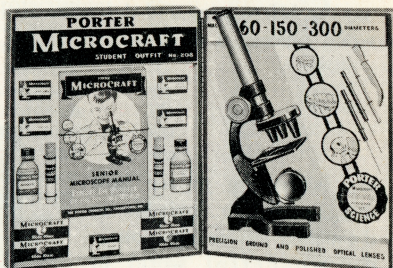
Explore the mysterious secrets of the invisible world with the precision-built high power, triple objective Microcraft Collegiate Microscope now packed in new lithographed steel cabinet. It gives sharp, clear, undistorted viewing without eyestrain and is suitable for lab or hobby use. Heavy metal frame with patented 3-point barrel suspension. Finest quality ground and polished optical glass lenses give magnification of 70-200-400 times actual size. Exclusive scanning feature makes possible scanning of entire specimen without moving

slide. Valuable equipment includes slides, removable metal test tube rack, four-in-one prepared slide, gold and uranium ore, dissecting and slide mounting materials, plus instructions manual. Size open 23½ x 13¼ inches.

MICROCRAFT STUDENT MICROSCOPE OUTFIT No. 208

Price \$7.98

You can see the hidden wonders of nature with this famous Microcraft Student Microscope. This new outfit contains a big triple turret metal Microscope and is now packed in a handsome lithographed steel cabinet. Lenses of finely ground and polished optical glass magnify 60-150-300 times actual size. Microscope turret has exclusive scanning feature so that entire specimen can be observed. Universal focusing keeps object in focus when changing powers. Includes slides, specimens, dissecting and slide mounting equipment, plus illustrated Senior Microscope Manual. Size open 21½ x 13 ¼ inches.



MICROCRAFT JUNIOR MICROSCOPE OUTFIT No. 205

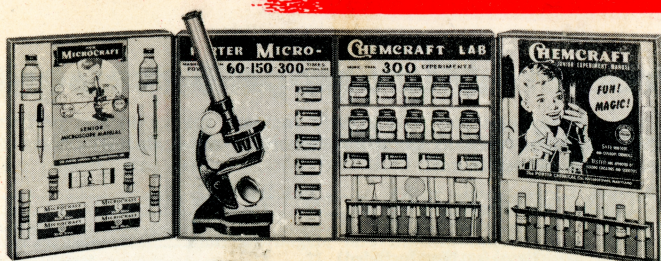
Price \$4.98



Packed with wonderful adventures in the fascinating invisible world. For the first time a triple nose Microscope in the Junior Outfit. Finely ground and polished optical lenses magnify 40-75-150 times actual size. Microscope has focusing wheel for finer adjustments. Dissecting equipment, slides, specimens included. Ideal beginners set with easy-to-understand illustrated Junior Manual. Plenty of fun lasting value at a surprisingly low price. Size 16 x 11 inches.

SEE THE INVISIBLE WORLD !

MICROSCOPES



MICRO - CHEM-CRAFT COMBINATION LAB No. 2614

Price \$13.98

Big, new Micro-Chemcraft Lab combines the sciences of Chemistry and Microscopy in one outfit. Complete Chemistry lab for performing 305 fascinating experiments, plus a triple turret Microscope with equipment for preparing specimens. Finely ground and polished microscope lenses provide magnifications of 60-150-300 times actual size. Large supply of chemicals, two removable metal test tube racks, specimens, dissecting and slide mounting equipment. Packed in new lithographed steel cabinet. Chemcraft manual describes experiments in mysterious Chemical Magic in addition to those in General Chemistry. Size open 43 x 13 $\frac{3}{4}$ inches.

MICRO-CRAFT TRIPLE OBJECTIVE STUDENT MICROSCOPE No. 277

Price \$6.98

Everything you could want in a separate Microscope. Precision-made with a heavy metal frame, it features a triple turret with magnifications of 60, 150 and 300 times. Lenses are finely ground and polished optical glass. Equipped with spring stage clips for holding slides, two focusing wheels, tilting frame, and large fully adjustable mirror. It comes packed with two slides and instruction folder in a handy wooden cabinet.



MICRO-CRAFT FOUR-TURRET MASTER MICROSCOPE No. 299

Price \$9.98



New, large 4-turret professional metal microscope. Precision ground and polished optical lenses give magnification of 75-150-300-450 times actual size and provide large clear field. Exclusive scanning feature makes it possible to view entire specimen without moving slide. Universal focusing keeps object in focus when powers are changed. Two large focusing wheels provide finger-tip control for finer adjustments. Includes slides, dissecting needles, tweezers and instruction manual. The microscope comes in a sturdy, handsome wood cabinet with handle.

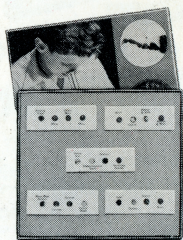
SEE DIRECTIONS FOR ORDERING ON PAGE 2

MICROSCOPES

Microcraft Microscope Accessories

By use of these accessories you will greatly increase the value and performance of your microscope outfit, as well as greatly increasing the number of observations and experiments that can be performed.

Low Power Objective (approximately 50 X)	.....	\$ .75
Medium Power Objective (approximately 100 X)	.....	1.00
High Power Objective (approximately 200 X)	.....	1.50
Better Vision Sub-Stage Illuminator with 2.2-Volt Magnifying Bulb	.....	.50
Electronic Battery Holder (Batteries Not Included)	.....	.35
Electronic Stage	.....	.35
Microscope Mirror	.....	.25
Uranium Ore	.....	.45
Silver Ore	.....	.20
Gold Ore	.....	.30
2.2-Volt Magnifying Bulb (For Sub-Stage Illuminator)	.....	.15
Booklet, "How To Use Your Microcraft Microscope Attachments"	.....	
Tells about many interesting pieces of equipment which can be added to your Microcraft Microscope		.10
Sodium Ferrocyanide	.....	.20
Ammonium Chloride	.....	.15
Strontium Chloride	.....	.20
Tartaric Acid	.....	.20
Sodium Salicylate	.....	.20
Magnesium Sulfate	.....	.15
Calcium Chloride	.....	.15
Stearic Acid	.....	.15
Urea	.....	.15
Thinner	.....	.15
Mounting Cement	.....	.15
Glass Slides (Blank)	 per dozen	.20
Brush	.....	.15
Tweezers	.....	.15
Dissecting Needles	 per pair	.10
Rubber Bulb Pipette	.....	.10
Glass Rod (5 mm. x 4")	.....	.05
Lens Paper	.....	.10
Blank Labels for Slides	 per 24	.10
Specimen Covers	 per dozen	.20
Diatomaceous Earth	.....	.10
Dissecting Magnifier	.....	.35
Sponge Skeleton	.....	.10
Microcraft Senior Microscope	.....	5.00
Microcraft Junior Microscope	.....	4.00
Microcraft Senior Microscope Manual	.....	.40
Microcraft Junior Microscope Manual	.....	.15

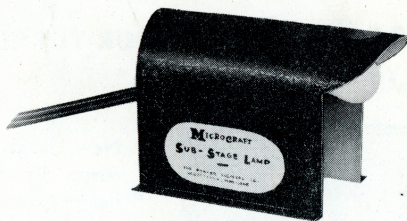


SLIDE SET

No. 251

Price \$1.50

Four-in-one set of mounted specimens on glass slides. There have been many requests for a set of mounted specimens for use with microscopes. This set is unusual in that each of the 5 slides contain four subjects, a total of 20 different specimens in all.



SUB-STAGE LAMP

No. 262

Price \$2.50

A sub-stage lamp is an important accessory for improved illumination, designed to fit in the base of the ScienceCraft Microscope. This lamp gives a strong diffused light, which will help bring out details of many subjects. Complete with cord and plug for 110-115 volt current.

Catalog of Refills, Apparatus, and Books

Refills may be purchased in 1 oz. Bottles, or in 4 oz. sturdy bulk containers. Filter papers, Test papers, etc., are of course furnished in Chemcraft Envelopes or Parcels.

	Refill 4 oz.		Refill 4 oz.
1—Sulfur	.15 .35	32—Congo Red Paper	.10
2—Sodium Borate	.15 .35	33—Glycerine	.15 .35
3—Trisodium Phosphate	.15 .35	35—Turmeric Paper	.10
4—Sodium Carbonate	.15 .35	36—Powdered Iron Metal	.15 .35
5—Sodium Bisulfite	.15 .35	38—Calcium Hypochlorite	.15 .35
6—Sodium Ferrocyanide	.20 .45	39—Azurite	.15 .35
7—Sodium Bisulfate	.15 .35	41—Starch	.15 .35
8—Dye Water	.10	42—Phenolphthalein Paper	.10
9—Ammonium Chloride	.15 .35	43—Iron Sulfide	.15 .35
10—Strontium Chloride	.20 .45	45—Chrome Alum	.15 .35
11—Zinc Metal	.10	46—Ammonium Hydroxide	.15 .35
12—Aluminum Sulfate	.15 .35	47—Cochineal	.15 .35
13—Nickel Ammonium Sulfate	.15 .40	48—Magnesium Sulfate	.15 .35
14—Tartaric Acid	.20 .45	49—Calcium Sulfate (Gypsum)	.15 .35
15—Tannic Acid	.20 .45	50—Calcium Carbonate (Precipitated Chalk)	.15 .35
16—Sodium Thiosulfate	.15 .35	54—Boric Acid	.15 .35
17—Ferrous Ammonium Sulfate	.15 .40	55—Powdered Charcoal	.15 .35
18—Litmus Paper (State Color) 6 pc.	.15	56—Charcoal Lump	.15
19—Sodium Silicate Solution (Water Glass)	.15 .35	57—Calcium Chloride	.15 .35
20—Calcium Oxide	.15 .35	58—Flame Test Wire	.10
21—Ferric Ammonium Sulfate	.15 .40	59—Blank Test Paper	.10
22—Phenolphthalein Solution	.15 .35	60—Filter Paper	.10
23—Sodium Iodide Solution	.15 .35	61—Stearic Acid	.15 .35
24—Manganese Sulfate	.15 .35	62—Benzoic Acid	.15 .35
25—Sodium Bicarbonate	.15 .35	63—Graphite	.15 .35
26—Sodium Salicylate	.20 .45	66—Bismuth Subnitrate Solution	.15 .35
27—Cobalt Chloride Solution	.15	67—Potassium Carbonate	.15 .35
28—Chameleon Paper	.10	68—Dilute Hydrochloric Acid 5%	.15 .35
29—Logwood	.15 .35	70—Dilute Acetic Acid	.15 .35
31—Sulfide Test Paper	.10	75—Dimethylglyoxime Solution	.15 .35

APPARATUS AND BOOKS

Streak Plate	.15	Gas Delivery Tube and Stopper	.10
Glass Tubing, 11 x $\frac{1}{8}$ in. size—6 pcs.	.25	Wash Bottle Assembly Complete (250 ml. Flask, Stopper, 3 pieces of bent Glass Tubing)	.90
Hydroquinone	.15	Glass Tube	.05
Potassium and Sodium Tartrate	.15	Assorted Glass Tubing (7 pieces)	.25
Saccharine Solution	.15	Test Tubes (4 x $\frac{1}{2}$ inch size) 5c ea., 40c per dozen	
Muscovite	.10	Test Tubes (5 x $\frac{3}{8}$ inch size) 10c ea., 3 for 25c	
Selenite	.10	Porcelain Crucible, 15 ml. No. 0	.85
Zinnwaldite	.10	Chemcraft Alcohol Lamp Blow Torch	.50
Rose Quartz	.10	Alcohol Lamp (1 oz.)	.25
Resin	.10	Alcohol Lamp Wick	.05
Willemitite	.15	Hard Wax Candle	.05
Wernerite	.15	Stirring Rod, Spoon, and Measure	.15
Graphite	.10	Metal Chemcraft Balance	1.25
Franklinite	.15		
Chemcraft Micro-Projector Bulb	.50		
Hematoxylin Stain	.15		
Eosine Stain	.15		
Methyl Green Stain	.15		
Methyl Violet Stain	.15		
Glass Rod (5 mm. x 4")	.05		
Lens Paper	.10		
Eight-hole Test Tube Rack (without drying pegs)	.35		
Watch Glass	.20		
Mortar and Pestle (1 ounce)	.50		
Flask (Florence) 60 ml.	.40		
Flask (Florence) 250 ml.	.60		
Flask (Erlenmeyer) 125 ml.	.50		
Beaker (Resistant Glass) 50 ml.	.40		
Beaker (Resistant Glass) 100 ml.	.50		
Funnel	.35		
Bryan Chemical Illustrators	.75		
Gas Generating Apparatus Complete	.50		
Gas Generating Apparatus without Funnel	.25		
Bryan Valence Blocks	1.50		

Books and Instruction Manuals

The Chemcraft Beginners Manual	.50
The Chemcraft Junior Manual	.75
The Chemcraft Senior Manual	1.25
The Chemcraft Master Manual	1.50
Chemcraft Chemical Magic Manual	.35
Chemcraft Glass Blowing and Construction of Laboratory Apparatus Manual	.35
ScienceCraft Micro-Projector Manual	.25
ScienceCraft Senior Microscope Manual	.40
ScienceCraft Mineralogy Manual	1.50
Microscope Attachment Manual	.25

HANDBOOK

ATOMIC ENERGY ACCESSORIES

The extremely important Atomic Energy feature is included in the three largest Chemcraft Outfits, and the list of materials shown below will aid you in replacing these parts if you have used them up and require more.

If you are ordering this equipment for the first time, and not as a replacement we sincerely advise you to buy the **COMPLETE ATOMIC ENERGY KIT**—not only will you save money, but also, the various apparatus and equipment are of more value and interest to you when used together and as a series of experiments. For example, "The Story of Atomic Energy" manual is almost necessary to aid you in an understanding of how to use the Spinthariscopes, Uranium Ore, Radio-active Screen, and Uranium Chemical.

PRICE LIST FOR ATOMIC ENERGY UNITS

"The Story of Atomic Energy" Manual	\$.75 each
Chemcraft Spinthariscopes	.75 each
Uranium Ore	.45 each vial
Uranium Chemical	.45 each vial
Radioactive Screen	.45 each

(Total \$2.85)

Complete Atomic Energy Kit packed in Box \$2.50

BRYAN VALENCE BLOCKS

PRESENT VISUALLY THE FUNDAMENTAL PRINCIPLES OF CHEMISTRY

In order to fill the demand for a larger and more complete set of Chemical Illustrators, we offer the Bryan Valence Blocks which are specially designed for use in connection with first year chemistry classes.

The Bryan Valence Blocks consist of over 100 differently shaped pieces representing the more common chemical elements and molecules. These pieces are designed to fit together so as to illustrate correct chemical combinations. Each piece is lettered with the name, symbol and atomic weight of the element or molecule, which it represents. The pieces are distinctively colored, blue indicating metals and red indicating non-metals. In addition, the shade of the color indicates the relative chemical activity of the elements or molecules. Valence is visually represented by the number of arms extending from each piece or block. Full instructions for the use of the blocks accompanying each set.

The Bryan Valence Blocks are highly recommended by leading educators in the field of chemistry as a visual aid in helping pupils to a quicker and better understanding of the principles of theoretical chemistry. The blocks are packed in a convenient box with compartments for keeping the various sizes and colors separate. -----PRICE \$1.50

ELECTRONIC CRAFT

PLATING OUTFIT No. 850

It's new! This modern, practical metal plating outfit with which a permanent and lasting plate of nickel or copper can be easily applied to almost all types of metal or other solid objects. It's fun to plate household items, metal toys, costume jewelry, hobby-craft materials or even small automobile parts. The Electronic Craft Plating Outfit uses no batteries or other outside electric current. Ample supplies of all chemicals are provided. Added feature attraction! Bronze baby shoes or other items of sentimental value! The very simple method used makes

it easy to produce an article of which you will be proud. Everything needed is in this complete hobby outfit which contains nickel and copper plating chemicals, antique copper finish, cleaning materials, plating racks, materials for bronzing baby shoes and other equipment.



Price \$3.98

SCIENCE OUTFITS AND SUPPLIES

DICK TRACY *

Dick Tracy Crimestoppers Lab No. 3

Price \$7.98

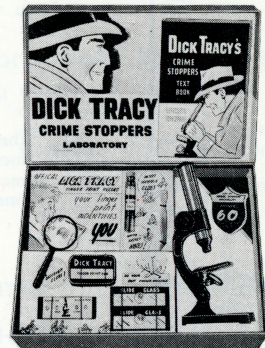


A complete Crime Stoppers Lab with fascinating equipment just like you'll find in major police departments. Contains mysterious black light for seeing invisible clues, invisible detection marker, lie detector that actually works, secret ink, fluorescent powder, professional type triple turret microscope and other authentic crime detection accessories. Youngsters and adults can have hours of entertainment solving every day mysteries such as who borrowed the money from the piggy bank, raided the ice box during the night, left the garage door open, or put that dent in the car fender! Exciting illustrated Crime Stoppers Manual shows how real police solve puzzling crimes.

Dick Tracy Crimestoppers Lab No. 1

Price \$4.98

An official Dick Tracy set for the amateur detective. Packed with real scientific crime detection material and apparatus of the type used by detectives, scientists and police in tracking down criminals. This exciting set contains complete fingerprint equipment, magnifying glass for finding clues, invisible ink, professional type rack and pinion microscope for analyzing evidence and other accessories to provide hours of fun for both children and adults. Interesting illustrated Crime Stoppers Manual gives a real education in the art of scientific crime detection.



The following list of equipment, apparatus and books for the Dick Tracy Crimestoppers Lab shows everything included in both outfits. Replacement parts can be ordered from this list, and owners of the smaller kit can supplement their labs.

Dick Tracy's Crimestoppers Textbook No. 1	.....	\$ .25
Dick Tracy's Crimestoppers Textbook No. 3	.....	.35
Black Light Bulb	.....	.75
Lie Detector	.....	complete .35
Finger Print Record Sheets (dozen)	.....	.15
Plain Slide Glass 1" x 3" (dozen)	.....	.20
Tweezers	.....	.15
Magnifying Glass	.....	.25
Finger Print Pad	.....	.25
Prepared Four-in-One Fibre Slide	.....	.25
Prepared Four-in-One Crystal Slide	.....	.25
Detection Marker	.....	.25
Secret Ink	.....	.15
Black Light Powder	.....	.25
Detection Powder	.....	.15
Test Tubes 1/2" x 4"	.....	.05
Lens Paper	.....	.10
Junior Crimestoppers Microscope	.....	4.00
Master Crimestoppers Microscope	.....	6.50
Dick Tracy Crimestoppers Lab No. 1	.....	complete 4.98
Dick Tracy Crimestoppers Lab No. 3	.....	complete 7.98

SEE DIRECTIONS FOR ORDERING ON PAGE 2

Useful Scientific Information

The Metric System

The feet and inches, ounces and pounds, quarts and gallons, commonly used as units of measurement in the United States and Great Britain are not well adapted to the needs of the scientist. In chemistry and other sciences, therefore, the metric system is almost universally used.

Metric Units of Weights

The metric unit of weight is the gram. One gram is the weight of one cubic centimeter (1 milliliter) of water at zero degrees Centigrade.

The most commonly used metric units of weight are the kilogram, the gram and the milligram.

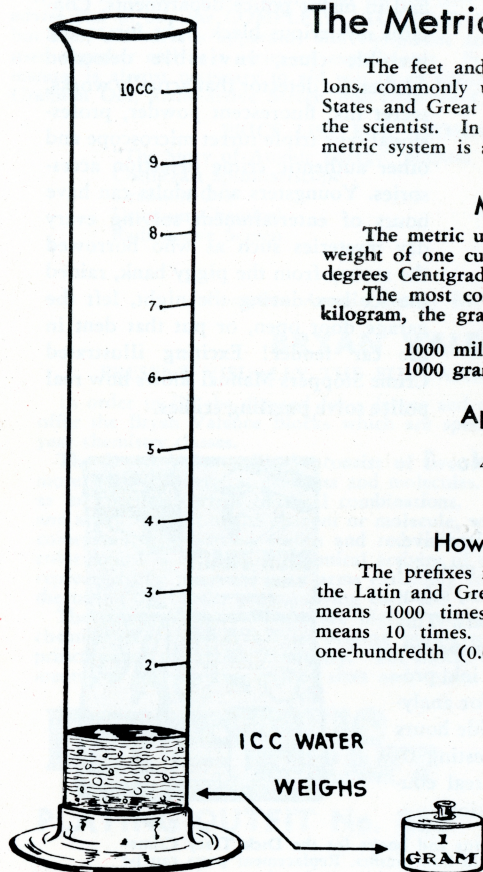
$$\begin{aligned} 1000 \text{ milligrams (mg)} &= 1 \text{ gram (g)} \\ 1000 \text{ grams (g)} &= \text{kilogram (kg)} \end{aligned}$$

Approximate Equivalents

$$\begin{aligned} 28.3 \text{ grams} &= 1 \text{ ounce} \\ 453.6 \text{ " } &= 1 \text{ pound} \\ 0.45 \text{ kilograms} &= 1 \text{ pound} \end{aligned}$$

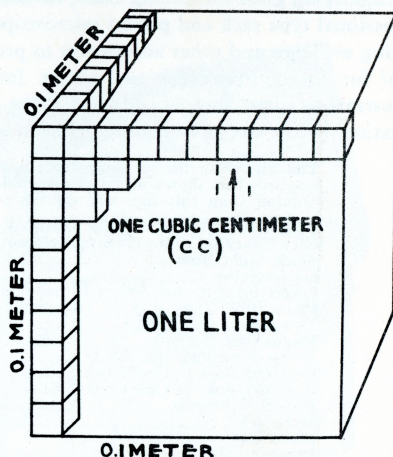
How Metric Units are Named

The prefixes in the names of metric units are taken from the Latin and Greek and have a definite meaning. Thus kilo means 1000 times the unit. Hecto means 100 times. Deka means 10 times. Deci means one-tenth (0.1). Centi means one-hundredth (0.01). Milli means one-thousandth (0.001).



Metric Units of Volume

The basic metric unit of volume is the liter, which is the volume of 1 kilogram of water at 4 degrees Centigrade. A cube with a volume of one liter measures almost exactly 0.1 meter (or 10 centimeters) on each edge. A liter is therefore equivalent to $10 \times 10 \times 10$ ($= 1000$) cubic centimeters (cc).



If a liter is divided into 1000 equal parts, each part is thus a cubic centimeter, or milliliter.

HANDBOOK

The commonly used metric units of volume are the liter and the milliliter. For all practical purposes the cubic centimeter and the milliliter are identical.

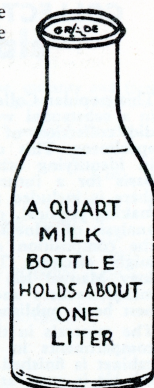
An ordinary teaspoon holds about 4 cc



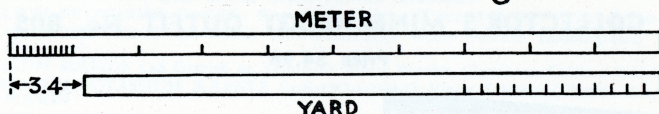
1000 milliliters (ml) = 1 liter (l)
1 milliliter = cubic centimeter (cc)

Approximate Equivalents

1 liter = 1.06 quarts
29½ milliliters = 1 fluid ounce
29½ cubic centimeters = 1 fluid ounce



Metric Units of Length

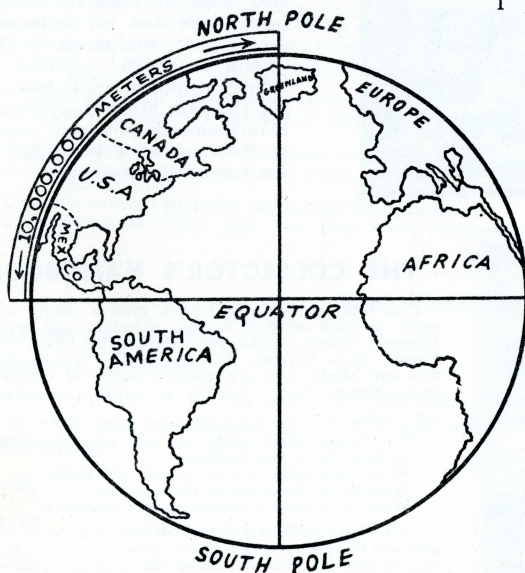


The most commonly used metric units of length are the kilometer, the meter, the centimeter and the millimeter.

10 millimeters (mm) = 1 centimeter (cm)
100 centimeters (cm) = 1 meter (m)
1000 meters (m) = 1 kilometer (km)

Approximate Equivalents

2½ centimeters = 1 inch
25 millimeters = 1 inch
1 meter = 39 inches
1 kilometer = 3/5 mile



The basic unit of length in the metric system is called the meter. A meter is approximately one-tenth-millionth of the distance from the equator to the north pole. The meter is about 39 inches longer than the yard.

The meter is divided into 10 equal parts each of which is called a decimeter. The decimeter in turn is divided into 10 centimeters and the centimeter into 10 millimeters.

MINERALOGY

COLLECTOR'S MINERALOGY OUTFIT

Price \$9.95

This popular Collector's Mineralogy Outfit is packed in a substantial wood cabinet, and contains a splendid collection of 48 large size, beautiful mineral specimens. This collection is used for comparison in identifying other minerals, and also forms the basis for a future, larger collection. In addition, there is included all of the necessary equipment for making physical, chemical and blowpipe tests in the analysis of minerals, so that the user can determine the composition of almost any mineral which he might discover. The 150-page Sciencecraft Mineralogy Manual has been approved and endorsed by many teachers and mineralogical authorities as the best book published on this subject for amateurs.

The minerals in this outfit are packed in individual compartments in a colorful unit tray. The wood cabinet is finished in modern blue Hammertone and the set is most attractive.

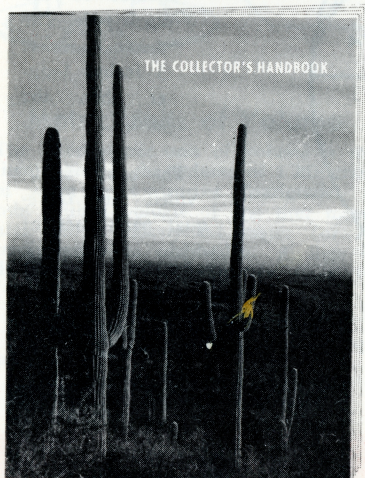


COLLECTOR'S MINERALOGY OUTFIT No. 805

Price \$4.98



Enjoy hours of exciting and educational fun collecting and identifying minerals. An excellent set for the beginner, it contains a splendid collection of 24 beautiful mineral specimens that help in identifying other minerals and also forms the basis for his own future collection. Set contains all the necessary equipment for identifying most any mineral the young prospector might find. The big 150-page Mineralogy Manual is recommended by many experts as the best book published on the subject for amateurs.



THE COLLECTOR'S HANDBOOK

This profusely illustrated book gives a clearly written story on such hobbies as the collection and study of Minerals, Insects, Rocks, Ferns, Animal and Bird Tracks, Fossils, Snow Crystals, Flowers, Shells, Woods, Butterflies and Moths, the new exciting hobby of BioPlastics, and others.

ARE YOU —

- Wondering which hobby you will enjoy the most?
- Looking for a new hobby?
- Wondering what is new in your old hobby?
- Wanting to know more about nature?
- Wanting to start a natural history collection?

THE COLLECTOR'S HANDBOOK will be of invaluable aid in answering the above questions, and will open to you new horizons on interesting facts of science.

Send today for this large (8½ x 11 inches) handsome new booklet — clearly written, nicely illustrated — the open door to many hours of delightful enjoyment.

Special Introductory Offer —

\$1.00 plus 10¢ postage

Catalog of Special Chemicals

The chemicals listed below are packed in attractive containers neatly labeled with name, quantity and formula. We have listed each chemical under the name most frequently used, and have also given the formula and other common names.

Anyone under 18 years of age ordering any of the chemicals marked "Poison," must have the order signed by his parents or guardian.

NO.	NAME, FORMULA AND PHYSICAL DESCRIPTION	1 oz.	4 oz.
305—	ACID ACETIC 36% (Solution) CH_3COOH (Vinegar Acid)	\$0.15	\$0.35
315—	ACID HYDROCHLORIC dilute 5% (Solution) HCl (Hydrogen Chloride) (Muriatic Acid) POISON	.15	.35
318—	ACID SALICYLIC $\text{OH.C}_6\text{H}_4\text{CO}_2\text{H}$ Needlelike Crystals	.15	.35
322—	ACID SULFURIC Dilute 5% (Solution) H_2SO_4 (Hydrogen Sulfate) (Oil of Vitriol) POISON	.20	.50
335—	ALLOY FUSIBLE (Wood's Metal)	.40	1.25
345—	ALUMINUM POTASSIUM SULFATE $\text{Al}_2\text{K}_2(\text{SO}_4)_4 \cdot 24\text{H}_2\text{O}$ White powder—clear irregular Crystals (Potash Alum) (Ordinary Alum)		.25
401—	BARIUM CARBONATE BaCO_3 White Powder POISON	.15	.35
402—	BARIUM CHLORIDE $\text{BaCl}_2 \cdot 2\text{H}_2\text{O}$ Flat Colorless Crystals POISON	.15	.35
406—	BARIUM SULFATE BaSO_4 Heavy White Powder (Barytes) (Heavyspar) POISON	.15	.35
512—	CALCIUM CARBONATE CaCO_3 Grayish White Lumps (Marble Chips)	.25	.25
514—	CALCIUM FLUORIDE CaF_2 Grayish White Powder (Fluorspar)	.25	.25
515—	CALCIUM HYDROXIDE $\text{Ca}(\text{OH})_2$ Fine White Powder (Calcium Hydrate) (Slaked Lime)	.20	.20
519—	CALCIUM PHOSPHATE—Monobasic $\text{CaH}_4(\text{PO}_4)_2 \cdot \text{H}_2\text{O}$ White Powder (Monocalcium Phosphate)	.15	.35
522—	CALCIUM SULFIDE CaS Grayish or Yellowish White Powder (Luminous Calcium Sulfide)	.30	1.00
533—	CHROMIUM POTASSIUM SULFATE $\text{Cr}_2\text{K}_2(\text{SO}_4)_4 \cdot 24\text{H}_2\text{O}$ Violet Crystals (Chrome Alum) POISON	.15	.35
567—	COPPER CARBONATE (Basic) $\text{Cu}_2(\text{OH})_2\text{CO}_3$ Green Powder (Cupric Carbonate) (Artificial Malachite) POISON	.15	.35
568—	COPPER CHLORIDE $\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$ Green Needle-like Crystals (Cupric Chloride) POISON	.20	.50
571—	COPPER OXIDE CuO Black Powder (Cupric Oxide) (Black Copper Oxide)	.15	.35
573—	COPPER SULFATE $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ Blue Crystals (Blue Stone) (Blue Vitriol) POISON	.15	.40
591—	DEXTRINE Yellow or White Powder (Starch Gum) (British Gum)	.15	.30
801—	FEHLING'S SOLUTION Alkaline Solution or Copper Solution	.20	.50
922—	GUM CAMPHOR $\text{C}_9\text{H}_{16}\text{O}$ White Translucent mass (Camphor)	.25	.65
1080—	HYDROGEN PEROXIDE H_2O_2 3% Solution		.40
1161—	IRON (ic) AMMONIUM SULFATE $\text{Fe}_2(\text{NH}_4)_2(\text{SO}_4)_4 \cdot 24\text{H}_2\text{O}$ Light Orange Crystals	.20	.50
1163—	IRON (ic) CHLORIDE $\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$ Yellowish Crystalline Mass (Ferric Chloride)	.20	.50
1165—	IRON (ic) FERROCYANIDE $\text{Fe}_4(\text{Fe}(\text{CN})_6)_3$ Dark Blue Powder (Ferriferrocyanide) (soluble Prussian Blue) POISON	.25	.65
1166—	IRON (ic) OXIDE Fe_2O_3 Reddish Brown Powder (Ferric Oxide) (Brown Oxide of Iron)	.15	.35
1168—	IRON (ous) SULFATE $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ Bluish green crystals (Copperas) (Ferrous Sulfate) (Green Vitriol)	.15	.35
1420—	LEAD METAL—(Granular) Pb Bluish Gray coarse powder		.40
1426—	LEAD OXIDE Pb_3O_4 Bright Red Heavy Powder (Red Lead) (Minium) (Red Oxide of Lead) POISON	.15	.35
1512—	MAGNESIUM CHLORIDE $\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$ White Crystals	.15	.35
1515—	MAGNESIUM OXIDE MgO Fine White Powder (Magnesia)	.20	.50

Send Today

The Porter Chemical Co.
Hagerstown, Maryland

Gentlemen: Here is \$1.00, plus 10¢ postage, enclosed — for which please send me at once your new booklet on Hobbies and Natural History — THE COLLECTOR'S HANDBOOK.

NAME

STREET

TOWN STATE

CHEMICALS

1531—MANGANESE DIOXIDE MnO_2 Black powder (Manganese Peroxide) (Pyrolusite)	.15	.35
1555—METHYL ORANGE INDICATOR $(CH_3)_2N.C_6H_4.N_2.C_6H_4.SO_3Na$	.60	1.75
1625—NICKEL NITRATE $Ni(NO_3)_2.6H_2O$ Emerald Green Crystals	.25	.65
1627—NICKEL SULFATE $NiSO_4.7H_2O$ Green Crystals (Nickel Vitriol)	.15	.35
1810—PHENOLPHTHALEIN $(OH.C_6H_4)_2.CO.C_6H_4.CO$ White Powder	.30	.75
1811—PHENOLPHTHALEIN SOLUTION IN ALCOHOL—INFLAMMABLE	.15	.35
1821—POTASSIUM BITARTRATE $KHC_4H_4O_6$ White Powder (Cream of Tartar)	.15	.35
1822—POTASSIUM BROMIDE KBr White Crystalline granules	.15	.35
1825—POTASSIUM CHLORIDE KCl White Crystals (Muriate of Potash)	.15	.35
1829—POTASSIUM FERROCYANIDE $K_4Fe(CN)_6.3H_2O$ Yellow Crystals (Yellow prussiate of Potash)	.20	.50
1838—POTASSIUM SULFATE K_2SO_4 Small Colorless Crystals or powder	.15	.35
1850—PARAFFIN Colorless wax-like substance		.20
2129—SODIUM ACETATE $NaC_2H_3O_2.3H_2O$ Colorless Crystals	.15	.35
2132—SODIUM BISULFATE $NaHSO_4$ White Crystals (Sodium Acid Sulfate) (Nitro Cake) POISON	.15	.35
2137—SODIUM CARBONATE $Na_2CO_3.10H_2O$ Colorless Crystals (Soda) (Sal Soda) (Washing Soda)		.35
2143—SODIUM HYDROXIDE $NaOH$ Hard White Pellets or Sticks (Soda Lye) (Sodium Hydrate) (Caustic Soda) POISON	.15	.35

Books

ELEMENTS OF CHEMISTRY by Brownlee and four other authors.

This is one of the best elementary text books. It covers the field of inorganic chemistry thoroughly and touches here and there on the simpler forms of organic chemistry. Many schools use this book. Its 684 pages are profusely illustrated. Cloth bound. Price ----- \$3.00

LABORATORY EXERCISES IN CHEMISTRY by Brownlee and other authors.

This book is written to accompany the above text book. It gives nearly a hundred different experiments. Contains much information about the care of the apparatus and chemical manipulation. Over 300 pages helpfully illustrated. Price ----- \$1.50

THE STORY OF ORGANIC CHEMISTRY.

This very interesting and highly instructive 64-page book is accompanied by a series of cut-outs, similar to the Bryan Valence Blocks, for actually constructing organic molecules. The book is written in simple

language and is profusely illustrated with diagrams outlining the most important phases of this very important branch of chemistry. With the molecular building blocks furnished, you can construct the formulae for gasoline, aspirin, acetone, chloroform, acetylene, and many other organic compounds. Price ----- \$1.25

Henley's Twentieth Century Book of FORMULAS, RECIPES AND PROCESSES

Latest Edition

One Useful Recipe Will be Worth More Than Ten Times the Price of the Book

Here is a book of 800 pages that is the most complete Book of Formulas ever published, giving thousands of recipes for the manufacture of valuable articles for every-day use. Hints, Helps, Practical Ideas and Secret Processes are revealed within its pages. It covers every branch of the useful arts and tells thousands of ways of making money and is just the book everyone should have at his command.

A book to which you may turn with confidence. A mine of information, up-to-date in every respect. Price ----- \$5.00

HUNTING WITH A MICROSCOPE

Shows hobbyists how to explore the invisible micro-world of plants and animals. Explains in simple terms how to select and use the Microscope. Gathering interesting specimens, close to home. Preparing slides, detecting finger prints, blood stains, forgeries, food adulterations. How

to take photographs through a microscope. Beginning Bacteriology. Blood circulation. Textile and urine analysis. Yeast and molds. 8 full pages of photo-micrographs of plant and animal life. Also 25 clear explanatory illustrations. 132 pages. Johnson and Bleifeld. Price ----- \$1.00

PLANT CULTIVATION MANUALS

BOOK No. 1—Plant Propagation — Seeds, Cuttings, Hormones (including Propagation Chart and Cutting Propagation Chart)	1.50
BOOK No. 2—Proper Conditions for Plant Growth, Soils, Fertilizers, Nutrients	1.00
BOOK No. 3—Plant Diseases and Insects—Insecticides, Fungicides, Traps, Baits, Repellants	1.95
BOOK No. 4—Plant Genetics—Artificial Pollination and the Production of Hybrids	1.25

SCIENCE IS EVERYWHERE !

Catalog of Minerals and Supplies

Collecting, Classifying and Studying Minerals is a profitable and enjoyable hobby for everyone

Collector's Mineralogy Manual \$1.50

This 150 page manual has been approved and endorsed by many authorities as the most practical book of Mineralogy for amateurs. There are chapters on geology, chemistry, crystallography, physical properties of minerals, and blow pipe and chemical tests. Under the heading "Descriptive Mineralogy" the properties, descriptions, locations, uses and complete physical and chemical tests for more than 125 native American minerals are given. Following this are chapters on Gems, How to Collect Minerals, and finally tables for quick determination of various minerals.

MINERALOGY TESTING EQUIPMENT AND REAGENTS

NO.

2	Sodium Borate	.15	Alcohol Lamp (1 oz.)	.25
4	Sodium Carbonate	.15	Alcohol Lamp Complete (2 oz.)	.50
11	Zinc Metal (granular)	.15	Wick for Alcohol Lamp	.05
27	Cobalt Chloride Solution	.15	Streak Plate	.15
31	Sulfide Test Paper	.10	Test Tubes (4 x 1/2" size) 5¢ each, 40¢ per doz.	
55	Powdered Charcoal	.15	Glass Tubing (11 x 1/8" dia.)	10 pcs. .40
56	Charcoal Block	.15	Measure	.05
58	Flame Test Wire	.10	Magnet	.10
68	5% Hydrochloric Acid (1 oz. bot.)	.15	Steel Mortar	.50
69	Manganese Dioxide	.15	Watch Glass (3")	.20
	Hard Max Candle	.05	Blowpipe	.75

LIST OF MINERAL SPECIMENS

The Mineral Specimens in the following list have been collected from famous localities in the United States and many other countries.

These minerals are 3/4" size or larger. Each specimen is numbered in accordance with the Dana System.

Price each \$0.15

No.	Mineral	Location	No.	Mineral	Location
2	Graphite	Ceylon	210F	Smoky Quartz	Virginia
2A	Graphite in Rock	New York	210G	Milky Quartz	Pennsylvania
3	Native Sulfur	Utah	210N	Gray Quartzite	South Dakota
13	Gold Bearing Quartz	Virginia	210O	Red Quartzite	South Dakota
13A	Gold Ore	Maryland	210P	Brown Quartzite	South Dakota
14	Silver Ore	Arizona	210R	Agatized Wood	South Dakota
15	Copper (Native)	Pennsylvania	210W	Flint	Denmark
25A	Iridescent Iron Ore	South Dakota	210Z	Red Jasper	South Dakota
54	Chalcocite	Montana	212D	Common Opal	Nevada
58	Sphalerite	Oklahoma	212O	Diatomaceous Earth	California
78	Bornite	Montana	212R	Tripolite	Oklahoma
83A	Chalcopyrite and Bornite	Colorado	224	Cuprite	Pennsylvania
83B	Massive Chalcopyrite & Magnetite	Pennsylvania	231C	Massive Emery	New York
83C	Chalcopyrite on Dolomite-Xls.	Oklahoma	232	Hematite—massive	Maryland
85	Massive Pyrite	Missouri	232A	Specular Hematite	Pennsylvania
85D	Nodular Pyrite	Indiana	232C	Red Paint Ore	South Dakota
96	Marcasite	Oklahoma	237A	Magnetite—pure variety, New York	
167	Sylvite and Halite—Xline,	New Mexico	241	Chromite	Maryland
175	Fluorite	Nova Scotia	248	Cassiterite	South Dakota
183	Cryolite	Greenland	250	Rutile Ore	Maryland
210A	Glassy Quartz	Maryland	254	Pyrolusite	Africa
210D	Rose Quartz	South Dakota	257	Goethite	Pennsylvania
210E	Amethystine Quartz	Virginia	258A	Dendrites	Pennsylvania
			259	Ocherous Limonite (Ocher)	Maryland
			259A	Stalactitic Limonite	Pennsylvania

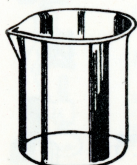
MINERALOGY

No.	Mineral	Location	No.	Mineral	Location
259D	Limonite -----	Maryland	426D	Pink Tourmaline -----	Maine
259E	Velvety Limonite --	North Carolina	427	Dumortierite -----	California
261	Bauxite -----	Arkansas	458	Muscovite Mica -----	Virginia
269	Psilomelane -----	Virginia	458B	Sericite -----	California
270A	Cleavable Calcite -----	Virginia	458C	Silver Mica Schist --	South Dakota
270C	Orange Calcite -----	Maryland	458D	Yellow Mica Schist --	South Dakota
270G	Black Marble -----	Virginia	460	Lepidolite -----	South Dakota
270H	Chalk -----	England	460A	Amber Lepidolite -----	South Dakota
270M	Pink Granular Calcite -----	Maryland	460B	Cookeite -----	Connecticut
270N	Mottled Limestone --	South Dakota	461	Zinnwaldite -----	Virginia
270P	Calcite with Phlogopite -----	Maryland	462	Biotite -----	North Carolina
271	Pink Dolomite -----	Oklahoma	462A	Phlogopite -----	New Jersey
271B	Cleavable Dolomite -----	Maryland	462C	Biotite with Quartz and Feldspar -----	South Dakota
271C	Red Dolomite on Serpentine Pennsylvania		462D	Eastonite -----	Pennsylvania
272	Magnesite -----	Maryland	462E	Caswellite -----	New Jersey
273	Siderite -----	Connecticut	462F	Biotite Schist -----	Maryland
274	Rhodochrosite -----	Montana	466A	Chlorite in Matrix --	North Carolina
277	Aragonite -----		466B	Chlorite in Quartz ---	Pennsylvania
313	Flos Ferri Variety ---	South Dakota	468	Clinoclchore Schist -----	New York
313D	Orthoclase Feldspar Crystals, Nevada		468A	Penninite on Basalt ---	New Jersey
313E	Pink Feldspar -----	South Dakota	480	Zonolite -----	Montana
315	White Feldspar -----	South Dakota	480A	Vermiculite (scales), North Carolina	
315B	Amazonstone -----	Virginia	481E	Chrysotile Asbestos -----	Arizona
315C	Yellow Feldspar -----	Virginia	481F	Serpentine—1 polished face	
315F	Ordinary Feldspar -----	Virginia			
	Orange Feldspar and Hematite Xls. in Quartz -----	Pennsylvania	481J	Picrolite -----	Maryland
316	Albite -----	Virginia	482	Deweylite on Magnesite --	Maryland
316A	Clevelandite -----	Virginia	484B	Talc—Soapstone Blocks --	Maryland
317	Oligoclase -----	North Carolina	484D	Massive Talc -----	Maryland
323	Enstatite -----	North Carolina	484F	Foliated Talc -----	Maryland
323A	Bronzite -----	North Carolina	490A	Glauconitic Sand (Greensand)	
325A	Diopside -----	Maine			
325B	Coccolite in Calcite -----	New York	492	Kaolin -----	Virginia
325C	Hedenbergite -----	Montana	496	Montmorillonite with Manganapatite -----	Maine
327	Spodumene -----	South Dakota	497	Pyrophyllite (white), North Carolina	
330	Pectolite -----	New Jersey	497A	Red Pyrophyllite --	North Carolina
335A	Fowlerite -----	New Jersey	502A	Thaumasite with Strontianite	
338F	Green Actinolite -----	Pennsylvania			
338G	Actinolite on Hornblende North Carolina		522	Microcline Xls. on Matrix -	Virginia
338J	Amphibole Asbestos, North Carolina		544	Lithiopyllite -----	Connecticut
338K	Mountain Leather -----	Maryland	549A	Apatite -----	Canada
338P	Hornblende -----	North Carolina	549B	Green Granular Apatite, New Jersey	
338X	Tremolite in Dolomite, Connecticut		549E	White Apatite on Matrix, Maryland	
357	Nephelite -----	Canada	552	Vanadinite -----	Arizona
360	Cancrinite -----	Maine	555A	Graphite -----	South Dakota
362	Sodalite -----	Canada	574	Lazulite in Pyrophyllite North Carolina	
370A	Grossularite Garnet -----	Connecticut			
370G	Garnet Xls. in Schist, South Dakota		639	Wavellite -----	Arkansas
376	Olivine -----	North Carolina	664	Carnotite—radio-active -----	Utah
393	Vesuvianite -----	Maine	701	Howlite -----	California
397	Massive Topaz -----	Virginia	704	Colemanite -----	California
399	Sillimanite (with Quartz) South Dakota		711A	Xls. of Thorianite on Matrix Pennsylvania	
400	Kyanite—Crystalline -----	Virginia	719	Barite -----	West Virginia
406	Zoisite -----	Massachusetts	719A	"Desert Rose" Barite ---	Oklahoma
407A	Amygdaloid Epidote in Altered Rhyolite -----	Pennsylvania	719B	Nodular Barite -----	Oklahoma
408	Piedmontite -----	Pennsylvania	746	Rock Gypsum -----	Virginia
409	Allanite-radio-active, North Carolina		746A	Selenite Gypsum—Xline -	Oklahoma
411	Prehnite -----	New Jersey	746B	Satin Spar Gypsum --	South Dakota
415	Chondrodite in Rock --	New York	825	Anthractite -----	Pennsylvania
423	Calamine -----	Oklahoma	826	Oil Shale -----	Tennessee
426	Massive Tourmaline -----	Virginia	828	Bituminous Coal showing Color Interference -----	Pennsylvania
426A	Tourmaline Xls. in Clusters South Dakota		828D	Lignite -----	Montana
426B	Tourmaline Xls. on Mica in Gneiss -----	Connecticut	830	Pumice -----	Italy
			831	Obsidian -----	California
			832	Bituminous Sandstone ---	California
			833	Umber -----	Italy

Chemical Laboratory Equipment

No. 1—ASBESTOS BOARD, 4" square, for use as a protection when heating Beakers, Evaporating dishes flasks, etc.

Price Each ----- \$0.15



No. 34—BEAKERS

A few beakers in your laboratory will be a great convenience. They can be used for heating liquids, whereas a tumbler would break as soon as heat was applied. Our beakers are made of best quality resistant glass and will be found highly satisfactory.

Capacity	50ml	100ml	150ml	250ml
Price each	\$0.40	\$0.50	\$0.50	\$0.60

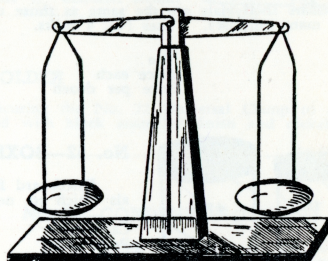
No. 35—"PYREX" BRAND GLASS BEAKER

This beaker is made of special glass to resist breaking when heated. Capacity 150 ml. Price each ---- \$0.70

No. 16—CHEMICAL BALANCE

This balance is suitable for weighing small quantities of chemicals up to 10 grams. It is sensitive to 0.1 grams (one three-hundredth of an ounce). Height: 5½ inches. Two 1 gram weights are included with each balance.

Price each ----- \$1.25



No. 17—Additional 1 gram weights \$0.15 each.



No. 47—HOMEOPATHIC VIALS

Homeopathic vials with lip finish.	
Size	2 dram
Cork Size	No. 1
Price each	\$0.05
Price per dozen	0.40

REAGENT BOTTLES FOR EVERY PURPOSE

The best containers for laboratory chemicals and reagents are standard bottles. The bottles listed below are the best obtainable for this purpose and the different styles should be chosen according to the kind of reagent you wish to keep in them.

For storing acids and other liquids which would be liable to attack corks, and for volatile liquids, use narrow mouth glass stoppered bottles.

For solids which are affected by air or which give off corrosive fumes, use wide mouth glass stoppered bottles.

For ordinary liquids, use narrow mouth cork stoppered bottles.

For ordinary solids, use wide mouth cork stoppered bottles.

The stoppers in our glass stoppered bottles are ground to fit the bottles perfectly and the proper size corks and rubber stoppers for cork stoppered bottles are noted, but they are not included with the bottle.

No. 41—BOTTLES—NARROW MOUTH WITH GLASS STOPPERS

(Tinctures)

Capacity	1 oz.	2 oz.	4 oz.	8 oz.
Height	3¾ in.	4¾ in.	5½ in.	7 in.
Diameter	1¼ in.	1⅝ in.	1⅞ in.	2⅜ in.
Price each	\$0.35	\$0.40	\$0.45	\$0.55

No. 42—BOTTLES—NARROW MOUTHS FOR CORKS

Capacity	1 oz.	2 oz.	4 oz.	8 oz.
Cork Size	No. 3	No. 4	No. 4	No. 5
Rubber Stopper Size	No. 00	No. 0	No. 0	No. 1
Price each	\$0.05	\$0.08	\$0.12	\$0.18
Price per doz.	\$0.50	\$0.80	\$1.20	\$1.80

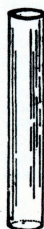
APPARATUS

No. 43—BOTTLES—WIDE MOUTH WITH GLASS STOPPER

(Salt Mouths)

Capacity	1 oz.	2 oz.	4 oz.	8 oz.
Price each	\$0.35	\$0.40	\$0.45	\$0.55

No. 44—BOTTLES—WIDE MOUTH WITH SCREW CAPS



Capacity	1 oz.	2 oz.	4 oz.	8 oz.
Price each	\$0.05	\$0.08	\$0.12	\$0.18
Price per dozen	.50	\$0.80	\$1.20	\$1.80

No. 45—BOTTLES—DROPPING WITH SCREW CAP

These 1 ounce bottles equipped with a rubber bulb pipette mounted in the screw cap are very useful for containing liquids of which only a drop or so are required at a time. They are especially good for storing and using indicator solutions.

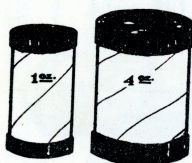
Price each ----- \$0.30



No. 46—SHELL VIALS

The shell vials are the same as those used in CHEMCRAFT and make convenient containers for many purposes. Takes No. 4 corks.

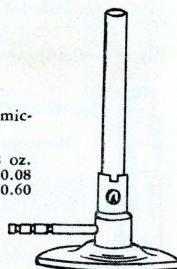
Size	4 x 1/2 in. flat bottom
Price each	\$0.05
Price per dozen	.40



No. 52—BOXES (Pasteboard)

Pasteboard Boxes make excellent containers for solid chemicals which are not affected by the air.

Capacity	1 oz.	2 oz.	4 oz.	8 oz.
Price each	\$0.05	\$0.06	\$0.07	\$0.08
Price per dozen	0.35	0.40	0.50	0.60



No. 55—BUNSEN BURNER

In this burner, devised by Robert Bunsen, a jet of illuminating gas is projected from a narrow opening into a wider tube. In this tube the gas becomes mixed with air, drawn in through openings whose dimensions can be altered by means of a perforated ring. When the air supply is sufficient, the flame becomes non-luminous and intensely hot. Recently the use of natural gas has become rather widespread. Since there is a difference in the composition of natural and artificial gas, the same burner will not work efficiently with both. Please determine which kind of gas you have before ordering.

Bunsen Burner for artificial gas. Price each ----- \$1.00
Bunsen Burner for natural gas. Price each ----- \$2.75

No. 56—WING TOP FOR BUNSEN BURNER



The wing top may be put on or taken off a Bunsen Burner easily and quickly. It makes a fan-shaped flame, which enables you to bend glass tubing more satisfactorily than with the regular flame as it heats the glass for several inches instead of in only one spot. This wing top fits only the artificial gas burner.

Price Each ----- \$0.30

No. 60—SPECIAL TUBING FOR BUNSEN BURNER

Per foot ----- \$0.30

No. 61—BURETTE

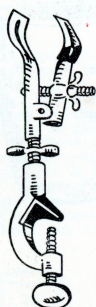


In experiments where it is necessary to measure out exact quantities of a liquid, a burette must be used. This burette is graduated so that you can read quantities as small as one-tenth of one cubic centimeter. Fitted with pinchcock, but without drawn glass tip. Capacity 25 cc.

Price each ----- \$2.70

CHEMCRAFT MEANS QUALITY !

APPARATUS



No. 66—CANDLES

Hard wax patent candles for laboratory use.

Price each \$0.05

No. 69—CLAMP (Burette)

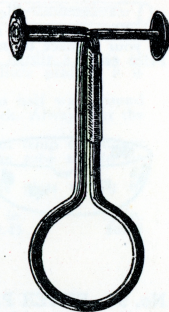
The most satisfactory and generally used clamp. Ideal for attaching and holding a burette, condenser, flask or test tube to an upright such as a ring stand. Adjustable to any angle.

Rubber covered jaw. Price \$0.80

No. 71—CLAMP (Pinchcock)

This clamp is for use with rubber tubing and is very easy to use because it stops the flow as soon as released by the fingers. With these clamps you can place tight valves throughout your apparatus without the expense of purchasing glass stop cocks.

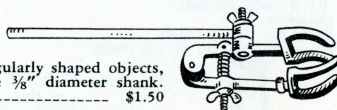
Price each \$0.30



No. 72—CLAMP (Universal)

This clamp is especially adaptable for use with condensers and irregularly shaped objects, of any size from $\frac{1}{16}$ " to 2". The jaws may be set at any angle to the $\frac{3}{8}$ " diameter shank.

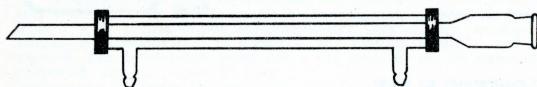
Price each \$1.50



No. 73—UNIVERSAL CLAMP HOLDER

Clamp designed especially for securing the No. 72 Universal Clamp to a ringstand or other support. Furnished with black enameled finish and nickel-plated brass thumb screws.

Price each \$0.60



No. 75—CONDENSER (Liebig's)

The Liebig condenser is designed expressly for the purpose of converting hot vapors to liquids. The hot vapors pass through the central condenser tube, which is covered with a jacket in which circulating water keeps the central tube cool, causing the vapors to condense. The liquids can be collected in a beaker.

or flask. This condenser is made in two parts, thus facilitating its cleaning. Liebig's condenser, length of jacket 10 inches \$1.85

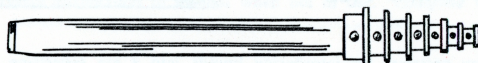


No. 78—CORKS (Regular Length—Taper)

We supply only the best grade of corks. Sizes to fit any bottle.

Cork Size	No. 0	1	2	3	4	5	6	7	8	9	10	11	12
Diameter in in.	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{1}{2}$	1	$1\frac{1}{8}$	$1\frac{1}{2}$
Price each	1c	1c	2c	2c	3c	3c	3c	3c	4c	4c	4c	4c	4c
Price per 10	10c	10c	15c	15c	15c	25c	25c	25c	25c	30c	30c	30c	30c

No. 80—CORK BORER



A good cork borer is useful in any laboratory. This one bores six sizes of holes, making a clean cut and is easy to use. Cork borer set of 1-6. Price each \$2.80



No. 83—CRUCIBLES (Porcelain) High Form

For experiments which require the heating of solids, melting metals, etc., crucibles are a necessity. Porcelain crucibles are best suited for fusing small quantities of materials over a bunsen burner or alcohol lamp, especially when the materials are of such a nature as to attack iron. Porcelain crucibles with cover.

Capacity
Price each

No. 0	No. 1	No. 2
15ml	30ml	50ml
\$0.85	\$1.20	\$1.45

APPARATUS

No. 84—CRUCIBLES (Clay) Size D

Clay crucibles round form with lip pouring. Can be used for melting metals in your furnace or stove. Capacity about 6 oz. 4" high, 2 3/8" top diameter.
Price each ----- \$0.40



No. 90—EVAPORATING DISHES

A good evaporating dish is essential for evaporating solutions and for carrying out reactions that necessitate heating liquids or pastes. Best quality porcelain evaporating dish.

Capacity	70ML	90ML
Price	\$0.70	\$1.10

No. 94—FILTER PAPER

Best quality laboratory filter paper, gives clear filtrate. 2 1/2 inch size fits 1 1/2 inch funnel, 5 inch size fits 3 inch funnel.

Diameter	2 1/2 in	5 in
Price per dozen sheets	\$0.05	\$0.08
Price per package of 100 sheets	0.15	0.25



No. 101—FLASKS (Florence) (Round-Flat Bottom)

There are many uses for flasks in the laboratory and several sizes should be kept on hand. The durable flasks we list will give the best service. The rubber stoppers which fit the different sizes are noted below:

Capacity	50ml	125ml	250ml
Rubber Stopper Size	No. 2	No. 3	No. 4
Price each	\$0.40	\$0.50	\$0.60

No. 102—FLASKS (Erlenmeyer)

Capacity 250ml	
Rubber stopper size -----	No. 4
Price each -----	\$0.60



No. 103—"PYREX" BRAND GLASS FLORENCE FLASK

This flask is made of special glass to resist breaking when heated. Capacity 250ml Price each ----- \$0.90

No. 112—GAUZE

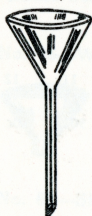
In heating flasks, beakers, evaporating dishes, etc., it is very important to protect the bottom of the vessel by using wire gauze. Our wire gauze is fine mesh and has an extra protection of asbestos woven in the center.
Wire gauze with asbestos center 4 inches square ----- \$0.20



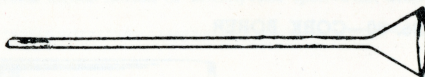
No. 106—FUNNELS

Good funnels are necessary in every laboratory not only for use in filtering, but also for filling narrow mouth bottles without spilling the liquids.

Best glass funnels, diameter 1 1/4 inch. Price each ----- \$0.35
Best glass funnels, diameter 3 inch. Price each ----- \$0.70

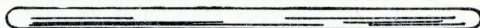


No. 108—FUNNEL TUBE



A funnel tube is very necessary for introducing liquids into a gas generating flask, as it makes it unnecessary to remove the cork from the flask and prevents air from becoming mixed with the gas. A funnel tube also acts as a safety valve and removes all danger of bursting apparatus.
Best quality glass funnel tube, length about 10 inches. Price each ----- \$0.45

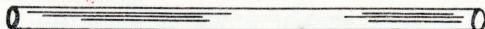
No. 115—GLASS ROD—3/16



Our glass rod is the best obtainable. You will find a few pieces very handy to have on hand for making stirring rods of various length, etc.—Furnished in eleven inch length.
Diameter 3/16 inch. Price per 10 pieces ----- \$0.35

APPARATUS

No. 116—GLASS TUBING



Every laboratory should have an assortment of various sizes of glass tubing. There is hardly a piece of apparatus that you may want to make that will not require some glass tubing. With a little practice it is very easy to cut and bend glass tubing.

In breaking a glass tube first make a scratch with a three-cornered file, extending about half way around the tube, then break the tube in your fingers or across a sharp edge as you would break a stick. Always put the strain on the tube at the point where the scratch is made.

To bend a glass tube place the part where is curve is required in the flame of an alcohol lamp or bunsen burner, using a wing top if possible. The whole of the surface must be heated and the tube should be revolved in the flame.

Larger tubing is much harder to break and bend than the smaller sizes. Best grade glass tubing in eleven-inch length. No. 3 wall.

Outside diameter
Price, per 10 pieces

$\frac{1}{4}$ in.
\$0.30

$\frac{3}{8}$ in.
\$0.35

$\frac{1}{2}$ in.
\$0.45

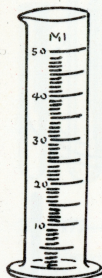
$\frac{3}{4}$ in.
\$0.65

No. 118—GRADUATE (Cylinder)

You will need a good graduate for measuring liquids. Our 50 ml graduate with pouring lip has wide base so that it stands firmly.

Graduated in milliliters from 1 to 50.

Capacity 50ml. Price each ----- \$1.50



No. 119—MEASURING CUP, with four graduations

Teaspoon, Tablespoon, Ounces and Centimeters.

Price each ----- \$0.20



No. 122—HYDROMETER

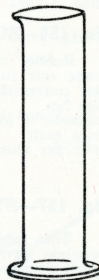
A hydrometer is used to determine the specific gravity of a liquid. The hydrometer is floated in the liquid, and when it comes to rest, without touching the sides of the container, the specific gravity is read directly from a scale printed inside the hydrometer. The density, or specific gravity, of a liquid is useful in determining the concentration of solutions, the strength of acids, and often gives an important clue in qualitative analysis. The hydrometers listed below are made of special resistance glass, thoroughly annealed and accurately calibrated, and are about 6" long.

Hydrometer for heavy liquids (acids, salt in water, liquids heavier than water). Price each ----- \$2.85

Hydrometer for light liquids (alcohol, most organic liquids, liquids lighter than water). Price each ----- \$2.85

No. 123—JAR (Hydrometer)

This type of jar is designed especially for use in taking the hydrometer readings of liquids. The jar is filled with the liquid and the hydrometer is then floated inside being plainly visible through the clear glass. This jar is also very useful for other purposes. Size $1\frac{1}{2}$ inches in diameter by 10 inches high. Price each ----- \$1.15



No. 126—LABELS

All of your laboratory chemicals should be labeled so as to avoid mistakes. We furnish neat blank labels, well gummed which will add greatly to the appearance of your reagent shelves.

Gummed labels—per pack of 100 ----- \$0.35

No. 128—LAMP (Alcohol) 2 oz.

If it is impossible to have a bunsen burner in your laboratory, a good alcohol lamp will serve as a substitute. Our alcohol lamps are made of heavy glass with cap to prevent evaporation of alcohol when not in use. Complete with wick.

Price ----- \$0.50



No. 141—MORTAR AND PESTLE

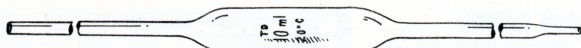
Many experiments require the pulverizing of chemicals in order to aid their reaction or mixture with other substances. For this purpose a glass mortar and pestle is used. Our mortars and pestles are made of heavy glass and the mortars have lips for pouring.

Mortar and Pestle, capacity 1 oz. Price each ----- \$0.50

Mortar and Pestle, capacity 4 oz. Price each ----- \$1.25



APPARATUS



No. 145—PIPETTE (Transfer)

With a pipette a known quantity of liquid may be drawn from a bottle and safely transferred to any desired container. This is one of the most convenient and accurate methods of measuring liquids.

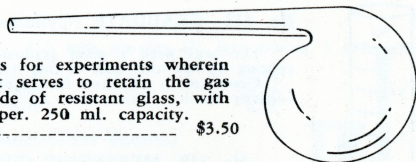
Transfer pipette, capacity 10ml. Price each ----- \$1.25
Transfer pipette, capacity 25ml. Price each ----- \$1.50

No. 146—PIPETTE (Measuring)

A measuring pipette is similar to a transfer pipette except that it is graduated, usually in tenths of a milliliter. This makes it possible to measure accurately very small quantities of a liquid. Capacity 10 ml.
Price each ----- \$1.60

No. 150—RETORT

A retort is a useful piece of laboratory apparatus for experiments wherein a corrosive or obnoxious gas is prepared. The retort serves to retain the gas and lead it to a suitable container. This retort is made of resistant glass, with tabulation in top of bulb and with ground glass stopper. 250 ml. capacity.
Price each ----- \$3.50



No. 152—RINGSTAND—

Base 4" x 6 1/4" Rod 3/8" x 14".

A good ringstand when properly fitted up will be used more than almost any other piece of apparatus. Our ringstands are best grade, oak base with iron rod.
Ringstand without rings. Price each ----- \$0.75

No. 152A—RINGSTAND—

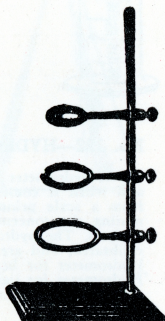
Base 5 1/4 x 7 1/4 Rod 3/8 x 20 inches.

This larger ringstand is of heavier construction than No. 152, having a larger base of cast iron. Ringstand without rings ----- \$1.85

No. 153—RINGS FOR RINGSTANDS

These cast iron rings clamp securely onto our ringstands. Easily adjustable to any height and are held by a winged screw attachment.

Diameter	2 inch	3 inch	5 inch
Price each	\$0.80	\$0.90	\$1.15



No. 156—RUBBER STOPPERS

Rubber stoppers seal tighter than corks and are less easily attacked by acids. We furnish the best grade soft rubber stoppers, either solid or with one or two holes. These rubber stoppers will be found very convenient when setting up apparatus. Specify whether solid, 1 hole or 2 hole.

Size No.	00	0	1	2	3	4	5	6	7	8
Diameter in inches	3/16	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	7/8
Price each	.02	.03	.04	.05	.06	.07	.08	.12	.15	.20
Price per Doz.	.20	.25	.35	.45	.55	.65	.75	1.00	1.25	1.50

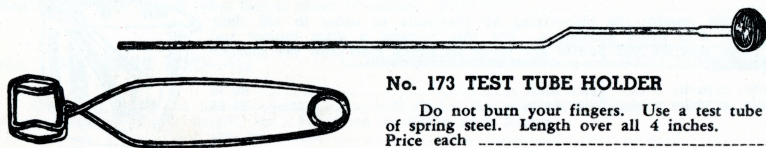
No. 157—SYNTHETIC TUBING

This tubing is especially made for chemical laboratory use. It is resistant to chemicals and will give excellent service.

Inside diameter	1/8 in	3/16 in	1/4 in.
Price, per foot	\$0.05	\$0.07	\$0.09

No. 164—SPOON (Deflagrating)

Frequently it is desired to burn a solid or liquid in a bottle or vessel containing a certain gas. In this case a deflagrating spoon is necessary and will be found a very useful article.
Deflagrating spoon 1/2-inch bowl, 16-inch handle, price each ----- \$0.35



No. 173 TEST TUBE HOLDER

Do not burn your fingers. Use a test tube holder. Made of spring steel. Length over all 4 inches.
Price each ----- \$0.10

APPARATUS

No. 174—TEST TUBE RACK

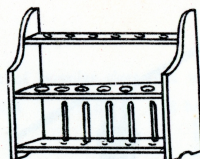
Wood test tube rack with holes for standing tubes up-right and pegs for draining washed tubes. You should have one in your laboratory.

Price each ----- \$0.85

No. 175—Small Test Tube Rack

Metal test tube rack, eight holes, without draining pegs.

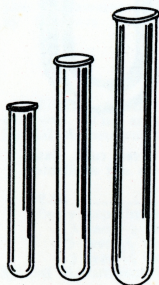
Price each ----- \$0.35



No. 170—TEST TUBES

High quality test tubes made by automatic machines from flint glass tubing. Uniform walls and a well formed lip. Each tube annealed and free from stains.

Size inches	4x $\frac{1}{2}$	5x $\frac{3}{8}$	6x $\frac{3}{4}$	7x $\frac{7}{8}$
Price each	\$0.05	\$0.10	\$0.12	\$0.15
Price per doz.	.40	.75	.90	1.00



No. 171—"PYREX" BRAND GLASS TEST TUBES

These test tubes are made of special glass to resist breaking when heated. Size 6" x $\frac{3}{4}$ ".

Price each \$0.18. Price per dozen \$1.75

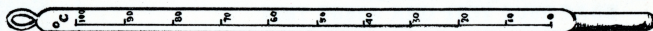
No. 172—TEST TUBE BRUSH

Always keep your test tube clean. Better results will be obtained. These brushes give a firm scrubbing surface from top to, and including, the rounded bottom of test tubes.

Price each ----- \$0.15

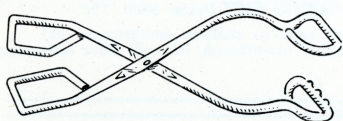


No. 178—THERMOMETER



Chemical thermometer graduated with both Centigrade and Fahrenheit scales. -40° to 230° F and -20° to 110° C. An excellent thermometer for any laboratory.

Price each ----- \$2.75



No. 180—TONGS (Crucible)

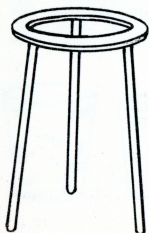
A good pair of crucible tongs come in very handy in case you have anything hot to pick up or hold.

Tong-steel. Price each \$0.60

No. 183—TRIANGLES

Iron wire triangles covered with clay pipestems make good supports to use on ringstands or tripods to hold crucibles, etc., when heating. Length of sides 2 inches. Iron wire pipestem triangles.

Price each ----- \$0.25



No. 185—TRIPOD

A good iron tripod is very convenient for heating flasks, beakers, evaporating dishes, etc.

Small Tripod Height 6 in. Price \$0.50

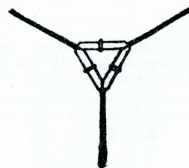
Large Tripod Height 9 in. Price \$0.90

No. 194—WATCH GLASS

For small experiments in crystallization, evaporating volatile liquids, etc., watch glasses are very convenient. Our watch glasses are made of well annealed glass with smooth ground edges.

Diameter about 3 inch.

Price each ----- \$0.20

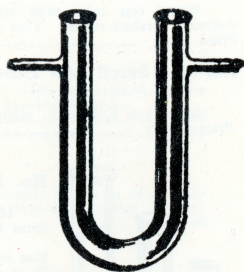


APPARATUS



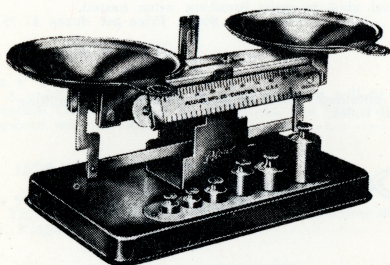
No. 191—U TUBES

These tubes are used for drying or washing gases. If you wish to remove moisture from the gas, put calcium chloride in the tube and as the gas passes through it the moisture will be absorbed. The gas may be washed by having water or other liquid in the tube and causing gas to bubble through. U tubes are generally connected to the gas generator and after passing through them the gas is collected and used as desired. Best grade glass U tube with side tubes, height 4 inches.
Price each ----- \$0.90



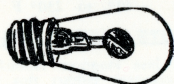
No. 197—WASH BOTTLES

With these bottles you can direct a fine jet of water into a test tube, flask or anywhere you desire. In a laboratory where running water is not available, they are practically indispensable.
Capacity 250 ml. Price each ----- \$0.90



No. 200 NEW SPECIAL PELOUZE SCALE

This is the finest small professional laboratory Scale available. It is the latest model, improved over previous Pelouze Scales. Nine new features: all metal, accurate to less than one grain, six brass metric weights, knife-edge pivot, self-locating sliding poise, dual readings in metric and avoirdupois systems. Often compared with the \$20.00 Scale. Price each \$8.95



No. 202 "BLACK LIGHT" ARGON LAMP

Glow lamp for generation of ultra-violet and black light. Fits standard socket for 110 volts AC or DC. Price each 75c

Apparatus Assortment

Look over these assortments carefully, you will find many bargains among them. We cannot break an assortment. If you do not want the assortment just as we have listed it, order your apparatus from the individual list. Order these assortments by number and include the required postage.

Assortment No. 4500

CORKS

Includes each size from number 1 to number 6. The sizes you use most frequently. About 50 corks altogether. Price ----- \$0.40



APPARATUS

Assortment No. 4505

RUBBER STOPPERS

Rubber stoppers are in constant use in any laboratory. Here is an assortment of popular sizes that will save your money.

	Solid	1 hole	2 hole
Size 0, diameter of large end $\frac{1}{8}$ inch	1	1	1
Size 1, diameter of large end $\frac{3}{16}$ inch	1	1	1
Size 2, diameter of large end $\frac{7}{16}$ inch	1	1	1
Size 3, diameter of large end $\frac{1}{2}$ inch	1	1	1
Size 4, diameter of large end $\frac{5}{8}$ inch	1	1	1
Size 5, diameter of large end $\frac{3}{4}$ inch	1	1	1
18 Stoppers altogether. Special Assortment Price	1	1	\$0.90

Assortment No. 4510

GLASS TUBING AND ROD

Fifteen pieces assorted glass tubing and rod. Tubing, $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{1}{2}$, inch diameter, Rod $\frac{3}{16}$ inch diameter. This assortment will give you just the glass tubing and rod you need for your laboratory.

Special Assortment Price ----- \$0.45

Assortment No. 4515

SYNTHETIC TUBING

Every experimenter needs flexible tubing. This assortment is just what you want.

3 feet $\frac{1}{8}$ inch inside diameter Synthetic Tubing

3 feet $\frac{3}{16}$ inch inside diameter Synthetic Tubing

3 feet $\frac{1}{4}$ inch inside diameter Synthetic Tubing

Special Assortment Price ----- \$0.50

Assortment No. 4520

FUNNEL AND FILTER PAPER

This assortment will take care of your filtering problems in fine shape. Includes a 3 inch funnel and a pack of filter paper to fit.

Price ----- \$0.80

Assortment No. 4530

TEST TUBES

Four of each of the most popular sizes of test tubes $4\frac{1}{2}$, $5\frac{3}{8}$, $6\frac{3}{4}$ inches. One dozen altogether. This assortment will be welcomed by every experimenter.

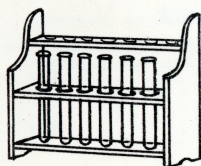
Price ----- \$0.75

Assortment No. 4535

TEST TUBES AND TEST TUBE RACK

This assortment includes the same test tubes as the assortment 4530 and in addition, a test tube rack as shown in the illustration.

Special Assortment Price ----- \$1.35



Assortment No. 4536

TEST TUBES AND SMALL TEST TUBE RACK

This assortment consists of four test tubes $4\frac{1}{2}$, four test tubes $5\frac{3}{8}$ inches and a small metal test tube rack. Special Assortment Price ----- \$0.75

Assortment No. 4540

FLASKS AND BEAKERS

One 50 ml beaker, one 50 ml flask, one 150 ml beaker and one 125 ml flask. Four articles, the most popular sizes. Made of special resistant glass.

Price ----- \$1.50

Assortment No. 4550

EVAPORATING DISH—CRUCIBLE—MORTAR AND PESTLE

This assortment includes one porcelain evaporating dish, capacity 2 oz., one porcelain crucible with cover, capacity 30ml, one mortar and pestle, capacity 1 oz.



Price ----- \$1.90

Assortment No. 4560

BUNSEN BURNER COMPLETE

Here is an outfit every laboratory should have. A bunsen burner fitted with a removable wing top and 24 inches of best quality tubing all ready to connect to your gas supply.

Price ----- \$1.50

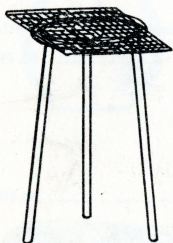
APPARATUS

Assortment No. 4570

BUNSEN BURNER AND LARGE TRIPOD

Includes a bunsen burner—two feet tubing—iron tripod and wire gauze; a mighty handy assortment.

Price ----- \$2.25



Assortment No. 4575

LARGE TRIPOD AND WIRE GAUZE

An iron tripod is very convenient for heating flasks, beakers, and evaporating dishes, and the asbestos centered wire gauze protects them from breaking. Can be used with either an alcohol lamp or bunsen burner.

Special Assortment Price ----- \$1.00

Assortment No. 4580

LARGE RINGSTAND COMPLETE WITH BUNSEN BURNER

Here is a dandy. One (No. 152A) adjustable ringstand. Three adjustable rings different sizes. One adjustable clamp for ringstand. One wire gauze. One bunsen burner with 24 inches best quality tubing.

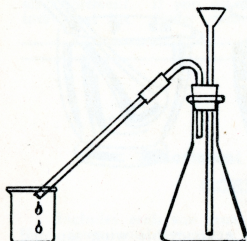
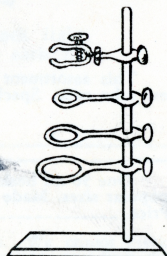
Price ----- \$5.50

Assortment No. 4585

RINGSTAND WITH RINGS AND CLAMP

This includes an adjustable ringstand with three sizes of rings, and an adjustable clamp for holding flasks or burette. One of the most useful pieces of equipment you can add to your laboratory.

Special Assortment Price ----- \$4.50



Assortment No. 4600

DISTILLATION APPARATUS

This assortment will answer two purposes. First—for distillation the long delivery tube should be wrapped with a cloth and kept damp with cold water to hasten condensation. Second—it may be used as a gas generator when heat is required to give off a gas. Included in this assortment are: one 8-oz. flask, one two-hole rubber stopper to fit, one funnel tube, one long delivery tube with rubber connection. Price ----- \$0.95

ELECTRIC CONSTRUCTION SET

No. 75 EC

Price \$2.98

Fascinating new construction set. Builds three complete battery-operated electric models that really work. An electric motor that can be used to run small toys; two separate telegraph units, each unit can send or receive; electric burglar alarm for protecting valuables (can also be used as fire or rain alarm). Set includes metal parts, wires, battery holders plus easy-to-understand illustrated instructions. Packed in colorful box. Easy to assemble. Provides hours of fun and enjoyment. Size 19 x 12 x 1 $\frac{3}{4}$ inches.

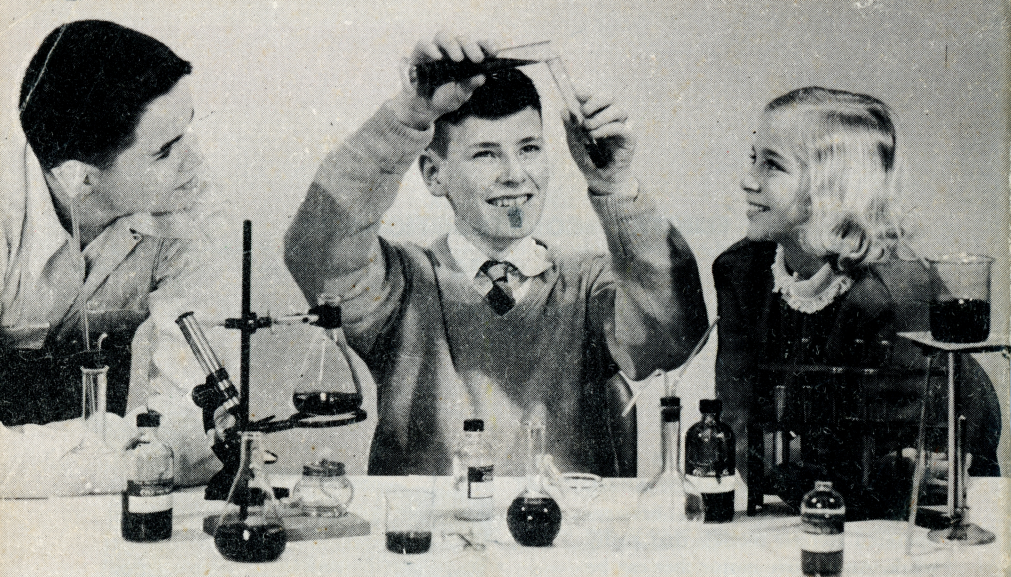


New, different electric construction set.
Builds three complete electrical toys. Easy to assemble.
Makes a Motor, Burglar Alarm, Two-Way Telegraph.
Includes metal parts, wires, battery holders.

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During the past year over 30,000 young scientists enrolled in the Chemcraft Science Club and received their Membership Cards. Many started local clubs and have been having lots of fun, and adding to their store of scientific knowledge.

HOW LOCAL CLUBS HAVE REAL FUN

By organizing a local club of the Chemcraft Science Club you and your friends can have an almost unlimited amount of good fun, and at the same time gain lots of valuable knowledge. Here are some of the activities other local clubs have undertaken with great success.

One local club gave a "Chemical Circus" and charged a small admission. The money was used to purchase more equipment for their club. Many local clubs give "Magic Shows," using chemical tricks and, of course, they have just as much fun in getting up these shows as the audience does in watching them. Excursions are always enjoyable, and sometimes prove very instructive. Many local clubs make regular excursions to various industrial plants which happen to be located nearby. This is a splendid activity, but always be sure to get permission to go through the plant from the proper authorities.

Then, there is always the opportunity for parties, entertainments, and what-not, as well as the regular weekly meetings. All in all, a local club of the Chemcraft Science Club is a dandy way for friends to get together and increase their knowledge of science, besides having lots of fun at the same time.

Send for your copy of The **CHEMCRAFT NEWS today**

It tells you how to organize a local Chemcraft Science Club, gives you suggested by-laws, tells how to select a name, elect officers, and how to run a successful club. There are interesting articles, letters and reports from other clubs, and names of club members who want to correspond with you.

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